

In the Claims:

1. (Currently Amended) [~~Claim 1~~] A diversity receiving device that receives a plurality of signals carrier-modulated with digital multivalued modulation, and selects or synthesizes the signals, comprising:

a demodulating unit that demodulates three or more input signals respectively and outputs a complex signal;

a reliability judging unit that calculates a sum of distances from a signal point to another signal point for respective signals using the complex signal, compares the sum of the distances with a given threshold, and outputs a judgement result; and

a synthesizing unit that performs one of selecting at least one signal, and selecting and synthesizing two or more signals according to the judgment result.

2. (Currently Amended) [~~Claim 2~~] A diversity receiving device that receives a plurality of signals carrier-modulated with digital multivalued modulation, and selects or synthesizes the signals, comprising:

a demodulating unit that demodulates three or more input signals respectively and outputs a complex signal;

a reliability judging unit that estimates a mapping point closest to a complex signal out of mapping points used when restoring bit data to an original state thereof from the complex signal, calculates a sum of distances from a mapping point to another mapping point for respective estimated mapping points, compares the sum of the distances with a given threshold, and outputs a judgement result; and

a synthesizing unit that performs one of selecting at least one signal, and selecting and synthesizing two or more signals according to the judgment result.

3. (Currently Amended) [~~CLAIM 3~~] The receiving device as claimed in claim 1, wherein the reliability judging unit has the synthesizing unit select the complex signal if the sum of distances from a signal point to another signal point for the respective signals is lower than the given threshold.

4. (Currently Amended) ~~{CLAIM 4}~~ The receiving device as claimed in claim 2, wherein the reliability judging unit has the synthesizing unit select the complex signal if the sum of distances from a mapping point to another mapping point for the respective estimated mapping points is lower than the given threshold.

5. (Currently Amended) ~~{CLAIM 5}~~ The receiving device as claimed in claim 1, wherein the synthesizing unit adjusts a weighting amount when synthesizing according to the sum of distances from a signal point to another signal point for the respective signals.

6. (Currently Amended) ~~{CLAIM 6}~~ The receiving device as claimed in claim 2, wherein the synthesizing unit adjusts a weighting amount when synthesizing according to the sum of distances from a mapping point to another mapping point for the respective estimated mapping points.

7. (Currently Amended) ~~{CLAIM 7}~~ A diversity receiving device that receives a plurality of signals carrier-modulated with digital multivalued modulation, and selects or synthesizes the signals, comprising:

a demodulating unit that demodulates two input signals respectively and outputs a complex signal;

a reliability judging unit that calculates a distance from a signal point to another signal point using the complex signal, compares the distance with a given threshold, and outputs a judgement result calculated according to the comparison result;

a synthesizing unit that outputs reliability information based on the judgement result and synthesizes both of the signal points;

a demapping unit that restores bit data to an original state thereof from the synthesized signal and calculates likelihood in restoring; and

an error correcting unit that performs error correction of the bit data using the likelihood corrected based on the reliability information.

8. (Currently Amended) [~~CLAIM 8~~] A diversity receiving device that receives a plurality of signals carrier-modulated with digital multivalued modulation, and selects or synthesizes the signals, comprising:

a demodulating unit that demodulates three or more input signals respectively and outputs a complex signal;

a reliability judging unit that calculates a sum of distances from a signal point to another signal point for respective signals using the complex signal, compares the sum of the distances with a given threshold, and outputs a judgement result calculated according to comparison results in the respective signal points;

a synthesizing unit that outputs reliability information based on the judgement result and synthesizes the input signal points;

a demapping unit that restores bit data to an original state thereof from the synthesized signal and calculates likelihood in restoring; and

an error correcting unit that performs error correction of the bit data using the likelihood corrected based on the reliability information.

9. (Currently Amended) [~~CLAIM 9~~] A diversity receiving device that receives a plurality of signals carrier-modulated with digital multivalued modulation, and selects or synthesizes the signals, comprising:

a demodulating unit that demodulates three or more input signals respectively and outputs a complex signal;

a reliability judging unit that estimates a mapping point closest to a complex signal out of mapping points used when restoring bit data to an original state thereof from the complex signal, calculates a sum of distances from a mapping point to another mapping point for respective estimated mapping points, compares the sum of the distances with a given threshold, and outputs a judgement result calculated according to comparison results in the respective signal points;

a synthesizing unit that outputs reliability information based on the judgement result and synthesizes the input signal points;

a demapping unit that restores bit data to an original state thereof from the synthesized signal and calculates likelihood in restoring; and

an error correcting unit that performs error correction of the bit data using the likelihood corrected based on the reliability information.

10. (Currently Amended) [~~CLAIM 10~~] The receiving device as claimed in ~~one of~~ ~~claims 7 through 9~~ claim 7, wherein the reliability judging unit outputs information indicating that reliability is high, as a judgement result, if not fewer than half of the comparison results for each signal point are lower than the threshold.

11. (Currently Amended) [~~CLAIM 11~~] The receiving device as claimed in ~~one of~~ ~~claims 7 through 9~~ claim 7, wherein the reliability judging unit stores distances from the respective signal points to other signal points for a certain previous period and sets an average value of the distances to a threshold.

12. (New) The receiving device as claimed in claim 8, wherein the reliability judging unit outputs information indicating that reliability is high, as a judgement result, if not fewer than half of the comparison results for each signal point are lower than the threshold.

13. (New) The receiving device as claimed in claim 9 wherein the reliability judging unit outputs information indicating that reliability is high as a judgement result, if not fewer than half of the comparison results for each signal point are lower than the threshold.

14. (New) The receiving device as claimed in claim 8, wherein the reliability judging unit stores distances from the respective signal points to other signal points for a certain previous period and sets an average value of the distances to a threshold.

15. (New) The receiving device as claimed in claim 9, wherein the reliability judging unit stores distances from the respective signal points to other signal points for a certain previous period and sets an average value of the distances to a threshold.